



technicalTM

Supporting Enterprise Networks and Operating Environments

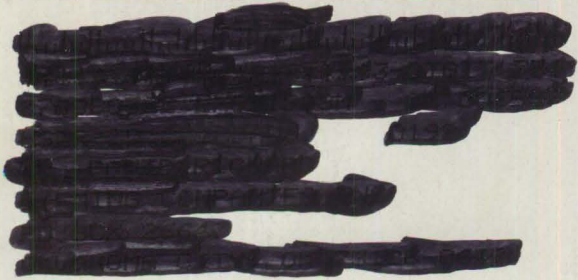
SUPPORT

AUGUST 1997

VOLUME 5, NUMBER 8

DISASTER RECOVERY

<http://www.naspa.net>



ALSO IN THIS ISSUE:

YEAR 2000 TESTING

INTRANETWARE CLIENT
FOR WINDOWS NT

BIOHAZARD

FEATURES

8 **DISASTER RECOVERY**

Implementation and Testing: A User Experience

By Tom Lashley

This article examines how a small, 70-user, VSE/ESA mainframe environment successfully prepared and implemented a disaster recovery plan — from getting motivated through recovery testing.

20 **Testing, Testing, 1-2-3: The Critical Step in Year 2000 Conversion Projects - Part I**

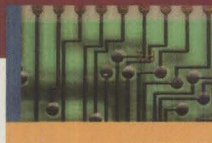
By James S. Huggins and C.E. Scott

This article examines how Year 2000 testing differs from any other type of software testing, discusses the challenges of the task from a Y2K perspective, and offers suggestions on how to survive this Millennium Bug.

45 **IntranetWare Client for Windows NT**

By John E. Johnston

The IntranetWare Client for Windows NT utilizes the power of NT on the desktop to provide a seamless agent for accessing the resources of both NetWare and Windows NT networks.



SYSTEMS

14 **Large System Instruction Timings**

By Richard N. Hevener

Geared to Assembler programmers and those who program in third-generation languages such as COBOL, C, PL/I, and FORTRAN, this article highlights results of tests the author performed to determine the timings of various computer instructions.

26 **OpenEdition MVS and the Bourne Shell: A User Experience — Part II**

By Evan Galen

This article continues the functional comparison between OpenEdition MVS and the SunOS Bourne shell by highlighting the similarities and differences between the two environments.

37 **Small Systems Caching: Does it Improve Performance?**

By Jim Conway

Performance is not simply how fast the drive reads, writes, and delivers data, it is how well the software is designed and how it extracts information. If the software is inefficient, cache — no matter where it is located — will do little to alleviate the situation.

52 **The Death of the PC?**

By Mark Bell

What does the future hold for the computing industry? Will the high cost of maintaining standalone PCs drive users to Java and the network PC? Will the mainframe become a file server?



NETWORKING

33 **Protecting Your Network With and Without Firewalls: Part VI - Securing Intranets and Internal Networks**

By Mark Bell

Most internal abuses are fairly harmless but any breach of security originating from inside the company is potentially more serious than outside penetration. Internal security should be a higher priority than external security; but unfortunately, it is often overlooked.

42 **Chicken Soup for Network Administrators: Part III — For Technology's Sake**

By Guy C. Yost

This article examines several situations in which humans let technology over-ride better judgement — to the point that people and companies will purchase huge computer systems without realizing their purpose.

49 **Security Issues for Common Work Tools: Part II**

Voice Mail Systems and Cellular Phones

By Leo A. Wrobel

Whether you're a technologist or the telecom manager, it's important for you to know the nuts and bolts safeguards behind the security of voice mail systems and cellular phones.

- 56 MVS Tools & Tricks**
Profiles in Creativity
By Sam Golob
- 59 Working Smarter**
Member List Tricks
By Jim Moore
- 61 VM Toolbox**
The Year 2000 and Looking
at Spool Space
By John D. Kinne
- 63 VSE Tools & Techniques**
Introduction to 31-Bit
Programming
By Leo J. Langevin
- 65 OS/2 Insights**
Building the Perfect Beast: Part II
The OS/2 Install Routine
By Michael Norton
- 66 Storage Strategies**
Making Room for More Data
ICKDSF VTOC Functions
By Steve Pryor
- 68 Enterprise Networking**
PPP Using NetWare Connect
By John E. Johnston
- 72 Opening Windows**
The Economics of PCs
By Al Shing
- 75 On a Personal Note**
Snippets of Slime
By Mike Sutton

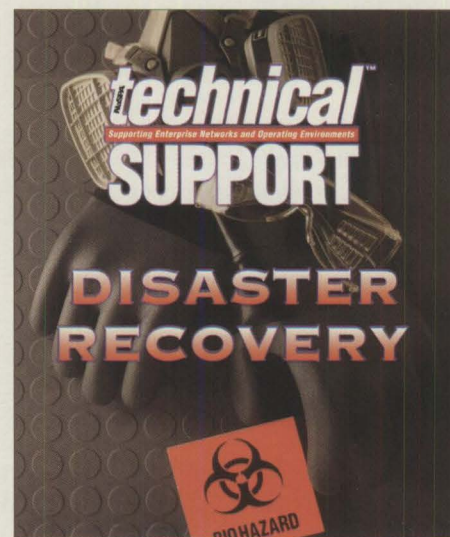


image copyright© 1995 PhotoDisc, Inc.

NaSPA Mission Statement:

The mission of NaSPA, Inc., a not-for-profit organization, shall be to serve as the means to enhance the status and promote the advancement of all network and systems professionals; nurture member's technical and managerial knowledge and skills; improve member's professional careers through the sharing and dispersing of technical information; promote the profession as a whole; further the understanding of the profession and foster understanding and respect for individuals within it; develop and improve educational standards; and assist in the continuing development of ethical standards for practitioners in the industry.

The information and articles in this magazine have not been subjected to any formal testing by NaSPA, Inc. or Technical Enterprises, Inc. The implementation, use and/or selection of software, hardware, or procedures presented within this publication and the results obtained from such selection or implementation, is the responsibility of the reader.

Articles and information will be presented as technically correct as possible, to the best knowledge of the author and editors. If the reader intends to make use of any of the information presented in this publication, please verify and test any and all procedures selected. Technical inaccuracies may arise from printing errors, new developments in the industry and/or changes or enhancements to components, either hardware or software.

The opinions expressed by the authors who contribute to *NaSPA Technical Support* are their own and do not necessarily reflect the official policy of NaSPA, Inc. Articles may be submitted by members of NaSPA, Inc. The articles should be within the scope of host-based, distributed platforms, network communications and data base, and should be a subject of interest to the members and based on the author's experience. Please call or write for more information. Upon publication, all letters, stories and articles become the property of NaSPA, Inc. and may be distributed to, and used by, all of its members.

NaSPA, Inc. is a not-for-profit, independent corporation and is not owned in whole or in part by any manufacturer of software or hardware. All corporate computing professionals are welcome to join NaSPA, Inc. For information on joining NaSPA and for membership rates, see page 73.

NaSPA Technical Support (ISSN 1079-3135) (IPM Agreement Number 0806773) is published monthly by Technical Enterprises Inc., 7044 S. 13th Street, Oak Creek, WI 53154-1429. Periodicals postage paid at Oak Creek, WI and additional mailing office. **POSTMASTER:** Send address changes to *NaSPA Technical Support*, 7044 S. 13th Street, Oak Creek, WI 53154-1429.

All product names mentioned in this publication are the trademarks/registered trademarks of their respective manufacturers.

D E P A R T M E N T S

- 6 From the President**
- 40 NaSPA News**
Web Works
By Steve Brueggemann
- 40 Letters to the Editor**
- 41 DEMOS on DEMAND and HOTLINKS**
- 48 NaSPA Services Directory**
- 51 NaSPA-Fax**
- 55 NaSPA MasterCard**
- 58 NaSPA CD-ROMs**
- 60 NaSCOM World Class Internet Site**
- 62 NaSCOM Web Site Storage Info**
- 69 NaSPA Insurance Programs**
- 70 Education Vendors**
- 73 Reader Services**
- 76 Recent Releases**



FROM THE PRESIDENT

Dear NaSPA member,

For those of us in the Northern hemisphere during the month of August wishing we were in the cooler Southern hemisphere, I submit the following: I will gladly take the heat of the summer sun over the frosty Wisconsin winters anytime. That having been said, I would like to tell you that NaSPA has been hot this summer! Many new plans have been made and are currently being implemented!

First, did you know that you can get \$20 off your annual NaSPA dues by signing up for our new MasterCard from MBNA? By calling 800-457-3714 you can apply for a MasterCard Gold or Platinum card with low annual interest rates and no annual fee ever. And, you can take a \$20 credit on next year's NaSPA membership dues! For details, see page 55.

Second, NaSCOM, NaSPA's Internet server, is moving at a very fast pace these days! Our 64K digital line has finally been replaced with a T-1 Internet trunk line, allowing us to provide very fast Internet access. We are also two hops closer to the Internet backbone! Those of you accessing our system from remote locations should see very fast access; those of you dialing local into NaSCOM to access the Internet should see even faster access!

Other items of interest: NaSCOM has been upgraded to version 3, thus alleviating several annoying bugs experienced in the previous version. On the FTP side, NaSCOM has been loaded with CBT-414 for our MVS members. Currently under development is a project to put the CBT overflow tape on our FTP server, too. Also available are the issues of *Technical Support* magazine from 1996; each issue is stored online in PDF format for use with Adobe Acrobat Reader™. A free copy of the Reader is also available online.

NaSPA CD-ROM Volume 1, Version 3.1 is Available

We're pleased to make Volume 1, Version 3.1 of the NaSPA CD available to our members. This version includes the implementation of Adobe Acrobat™, which allows us to provide all of the issues of *Technical Support* from 1996 in full graphical format! This is a radical improvement over past years when magazine issues were stored in ASCII format. Version 3.1 also includes a free copy of Microsoft Internet Explorer. While the CD will run well under Netscape Navigator, it was optimized to run under MSIE. Volume 1, Version 3.1 is truly an excellent product that we know you will find indispensable.

1997 NaSPA Member of the Year

Lastly, the board of directors has elected NaSPA board member Radi Shourbaji as "1997 Member of the Year" for his thousands of hours invested in our CD project over the past three years. The creation of this year's CD, as well as the past CDs, would not have been possible without his commitment. On a humorous note, Radi has done such a good job on this project that I'm sure that all of the other board members join me in hoping that this award will help persuade him to do Version 4.0 next year! At any rate, on behalf of the entire organization, thank you very much, Radi!

Whether it's summer or winter where you live, we hope you make the most of your season, and take advantage of all the benefits NaSPA membership has to offer!

Sincerely,

Scott Sherer

<http://www.naspa.net>
Published exclusively for NaSPA, Inc.

PUBLISHING

Publisher

Jerry Seefeldt, Ext. 110
jerry@naspa.net

Editor

Amy B. Novotny, Ext. 123
or (407) 296-5050
editor@naspa.net
103323.2556@compuserve.com

Art Director

Debbie Pflanzner, Ext. 124
graphics@naspa.net
71502.322@compuserve.com

Production Assistant

Andy Risser, Ext. 109

Membership Administrator

Jeanie Bucher, Ext. 116
mbrship@naspa.net

Membership Assistant

Pat Berggren, Ext. 115

Marketing Manager

Meg Marredeth, Ext. 106
mbrmktg@naspa.net

Technical Editors

Gerhard Adam, Eric Allred, David Anderson,
Mark Bell, David Brickley, Jeff Furman,
Sarah Genn, Israel E. Gotay, John E. Johnston,
John D. Kinne, David Kreuter, Leo Langevin,
Dwight S. Miller, Jim Moore, Steve Pryor,
Fred Schuff, Al Shing, Richard B. ViPond,
Guy C. Yost

Advertising Sales - Midwest, West & International

Jerry Seefeldt, Ext. 110
market@naspa.net

Advertising Sales - East Coast

Cal Hart
(908) 495-6660
calhart@exit109.com

Administrative Assistant

Jenny Rutzinski, Ext. 100
sales@naspa.net

Technical Services Supervisor

Michael J. Czarnecki, CNA, Ext. 105
helpdesk@naspa.net

List Services

Aggressive List Management, Inc.
(847) 304-4030

CORPORATE

President

Scott Sherer
sherer@naspa.net

Vice Presidents

Emit Hurdelbrink
hurdemiu@naspa.net
Amy Novotny
editor@naspa.net

Treasurer

Margaret Zizis
offmgr@naspa.net

NaSPA BOARD OF DIRECTORS

Chairman

Scott Sherer

Board Members

Amy Novotny, Tom Bryant,
Emit Hurdelbrink, Radi Shourbaji,
John Suchodolski

7044 S. 13th Street, Oak Creek, WI 53154
(414) 768-8000, (414) 768-8001 Fax
Printed in the USA.

© 1997 Technical Enterprises, Inc. All Rights Reserved.



Questions about your membership, address changes?
(414) 768-8000, Ext. 116 or email mbrship@naspa.net

Building the Perfect Beast: Part II

The OS/2 Install Routine

BY MIKE NORTON

In last month's column, we began our OS/2 pre-install routine: gathering documentation, obtaining drivers, and, in general, familiarizing ourselves with the body which will hold "the perfect beast." Like any good cook, I've developed a few "special ingredients" in my installation routine. Some may be more superstitious than effectual, but each was born from some need during my hundreds of OS/2 installations.

STEP 1: REPARTITIONING YOUR HARD DRIVE

First, repartition your hard drive to allow for installation of an OS/2 maintenance partition. While this is time-consuming initially, the investment will pay for itself many times over by allowing you to access your production partition without having to boot from the OS/2 Utility (or installation) diskettes. Many people are unaware that you cannot run even humble CHKDSK with the /F parameter specified to repair any file system errors on the boot drive without booting from diskettes. Since OS/2 is a multi-tasking system, its file sharing mechanisms prevent many low-level disk utilities from operating on volumes with open files — and the boot volume always contains open files. An additional installation of OS/2 allows you to use all your maintenance routines on the production installation partition — and from a PM environment, too, which may be more than just a luxury; some utilities require PM to operate. For this reason I don't recommend using "boot" utilities that will allow you to squeeze an OS/2 partition on your hard drive in only a few megabytes. A minimal regular installation only requires about 40MB, depending on the version of OS/2 and additional features installed. I generally install REXX and the installation utilities in a 40MB partition.

STEP 2: INSTALLING THE MAINTENANCE PARTITION


Installing the maintenance partition provides the additional benefit of identifying any installation problem areas before installation of the production partition even commences. On one particular machine, for example, I had to interrupt the installation process when OS/2 rebooted during installation by inserting a DOS boot disk. While this may seem superstitious, this procedure is the result of an experience I had in which vestigial extended attributes from a previous installation caused problems with a new installation of OS/2. Among other things, some objects retained their custom icons, despite having reformatted the volume before installing (a previous column detailing the implementation of EAs explained why this is possible). Whether the fact I've seen this problem only once means it's just a fluke, or whether it is the consequence of implementing the wipe-free step, you may judge for yourself; personally, I recommend wiping free space on the disk before beginning any installation.

STEP 3: BACK UP PARTITION TABLES AND BOOT SECTORS

That completed, I then use another GammaTech utility to back up my partition tables and boot sectors. No matter how clean and careful your install, a corrupted partition table or boot sector can completely ruin your day, if you'll forgive the understatement. This is the first of several recovery disks made for each machine during the process. After installing OS/2, I use the "Create Utility Diskettes" facility found in the OS/2 System Setup folder to create a fresh set of bootable diskettes. Although I have many sets of these diskettes, I recommend making a new copy for each machine. Copy the CONFIG.SYS, OS2.INI,

and OS2SYS.INI to a subdirectory on the third utility diskette, which has enough free space remaining for these configuration files as well as a few additional utilities. I usually keep a copy of recovery utilities such as GtDisk from the GammaTech Utilities, as well as a sector editor, in case a problem is really nasty and I have to edit disk structures manually. Fortunately, I've only had to go to that extreme a couple of times; again, you'll have to judge whether that is coincidental or a consequence of preparation.

STEP 4: INSTALLING OS/2

Having prepared the volume, we're now ready to install. At this juncture, I usually start to feel comfortable about the process. The installation of the production partition rarely causes any problems, since I've already installed a maintenance partition on the machine and likely have encountered and resolved any hardware conflicts or other installation problems that may arise. Now it's a matter of watching and waiting while the OS/2 installation program does its thing, and catching up on the latest issue of *Technical Support* magazine. 

Was this column of value to you? If so, please circle Reader Response Card No. 44.



Michael Norton is the workstation division manager at SoftTouch Systems, Oklahoma City, Okla., which provides both mainframe and PC software solutions.

He has written mainframe manuals in addition to articles for a number of publications. Michael can be contacted at mnorton@softtouch.com.